FORESIGHT

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Doubling Kentucky's Degree Holders

Benefits and Challenges of CPE's Plan

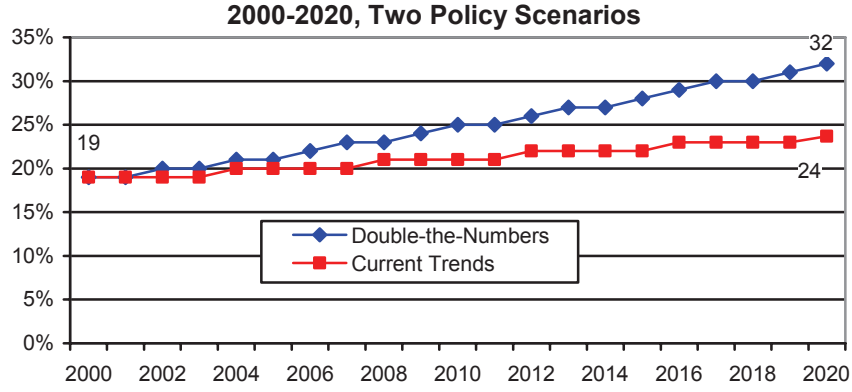
By Amy L. Watts

The Kentucky Postsecondary Education Improvement Act of 1997 (HB1) set the goals of improving Kentucky's system of higher education, increasing the number of college graduates, and, by 2020, achieving "a standard of living or quality of life that meets or exceeds the national average."[1] Since that time the Council on Postsecondary Education (CPE or the Council) has developed a five-step plan that, if realized, would double the number of four-year degree holders in Kentucky's adult population by the year 2020. This ambitious goal will be difficult to achieve, but our analysis shows clear economic benefits from its realization.

Selected Benefits of Doubling the Number of Degree Holders

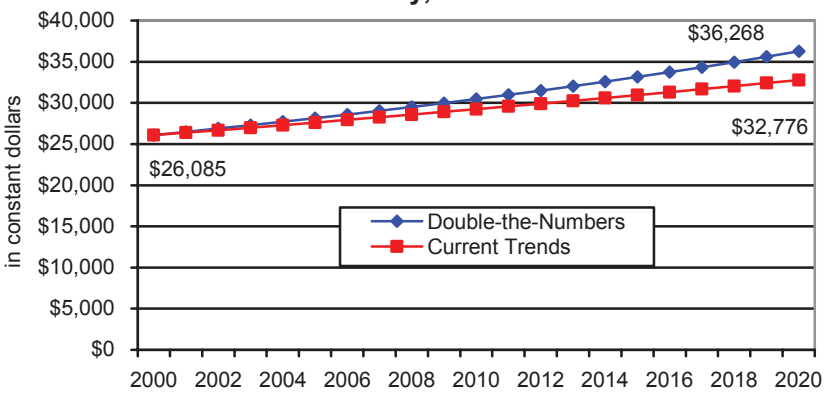
The Council has projected the percent of Kentucky's working-age adult population (ages 25 to 64) with a bachelor's degree or higher to increase from 18.7 percent in 2000, or 402,000 degree holders, to approximately 23.6 percent, or 580,000 working-age adults, by 2020 at current production levels. In order to meet the national projected educational attainment level of 32.1 percent of the population with at least a bachelor's degree by 2020, Kentucky would need an additional 211,000 degree holders, or 791,000 total, which is approximately double the number of degree holders in 2000 (Figure 1).[2] We refer to these policy scenarios as "current trends" and "double-the-numbers," respectively.

FIGURE 1
Percent of Kentuckians, Aged 25 to 64, with a Bachelor's Degree or Higher, Projected 2000-2020, Two Policy Scenarios



Source: Kentucky Council on Postsecondary Education

FIGURE 2
Estimated Per Capita Income, Kentucky, 2000-2020



Using a log-linear model, we estimate the positive relationship between a state's per capita income (PCI) and the education level of its workers and predict what effect doubling the number of four-year degree holders will have on PCI and general fund (GF) revenue.[3] Figure 2 shows the estimated 2020 PCI associated with 23.6 percent of working-age Kentuckians with at least a bachelor's degree at approximately $32,776, compared with a 2020 PCI of $36,268 associated with doubling the number of degree holders in the state. Figures 3 and 4 show the corresponding predicted aggregate personal income (API) in 2020 of approximately $161 billion and $179 billion for the two policy scenarios, respectively. And, assuming the revenue elasticity of income equals one (that is, the percentage change in revenue equals the percentage change in income), then the 2020 GF revenues would be approximately $10.5 billion and $11.7 billion, respectively.

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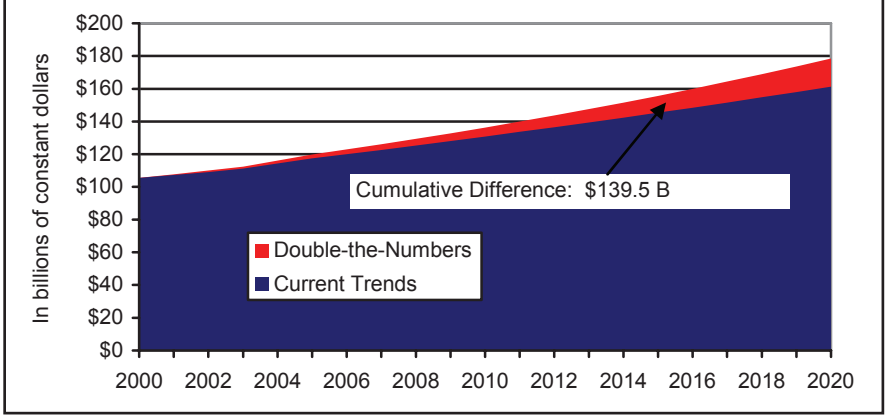
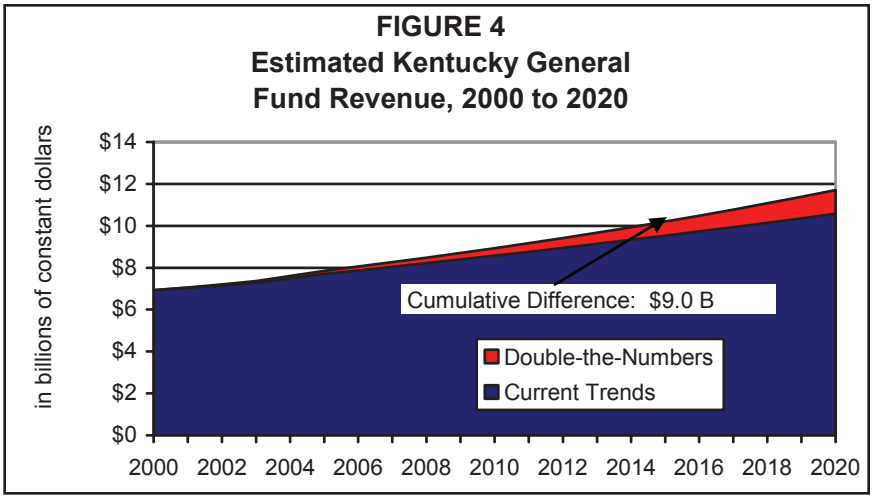
FIGURE 3
Estimated Aggregate Personal Income, Kentucky, 2000-2020



Taking the summation of API and GF revenue from 2000 to 2020 (the total area under the curves shown in Figures 3 and 4), we estimate a cumulative API of $2.76 trillion and cumulative GF revenue of $152.7 billion under the "current trends" scenario, and $2.90 trillion and $161.7 billion, respectively, under the "double-the-numbers" scenario. Comparing the two scenarios reveals that doubling the number of degree holders could yield an additional $139.5 billion in personal income and $9.0 billion in general fund revenue.[4]

FIGURE 4
Estimated Kentucky General Fund Revenue, 2000 to 2020



The Five-Step Plan

These conservative estimates show that the Commonwealth could realize substantial benefits by doubling the number of degree holders by 2020.[5] Accordingly, the Council has developed a five-step plan designed to produce the additional degree holders needed to reach the 32.1 percent national average (Table 1).[6]

Step 1 of the intervention plan calls for the production of 66,000 new degree holders by increasing postsecondary participation and quality.[7] As shown in Table 2, we estimate that this step would yield approximately $1,040 more in PCI by 2020.[8] Step 2 will improve GED to college transitions and add 4,000 more degree holders, adding $65 additional dollars to 2020 PCI. Step 3 of the intervention plan will funnel more first-time students through KCTCS and increase the number of degree holders in Kentucky's working-age population by approximately 26,000, leading to an increase in 2020 PCI of approximately $424. Step 4 of the intervention plan calls for 36,000 more degree holders by raising high school graduation rates and adding $599 in 2020 PCI. Finally, Kentucky will add 79,000 new degree holders to its count through the strategies employed by Step 5, which focuses on increasing migration and economic development. Achieving this step will add approximately $1,365, bringing the total difference in projected 2020 PCI between the "current trends" and "double-the-numbers" scenarios to $3,492.[9]

Challenges to Achieving the Double-the-Numbers Scenario

Here we assess the likelihood of achieving each of the five steps by analyzing past trends and considering future challenges. Analyzing past trends helps to identify those strategies with relatively low, medium, or high likelihoods of attainability. In addition to past trends, other mitigating factors could pose challenges to the full attainment of this plan. For example, increasing enrollment, as well as retention, are significant parts of the strategy for many of the steps outlined in the intervention plan.[10] Yet, a recent report by the Kentucky State Auditor's Office finds that rising tuition rates for resident students may be depressing enrollments. Moreover, a 2007 report by the Kentucky Developmental Education Task Force notes that "more than half of the first-time freshmen entering Kentucky's colleges are underprepared in at least one subject … [and] for those underprepared students, the first-year college dropout rate is twice the rate of academically prepared freshmen."[11] By categorizing each step according to its likelihood of success and its contribution to per capita income, we hope to highlight policy areas that appear to offer the most leverage for ensuring future success.

Step 1. One of the strategies outlined in Step 1 includes a 19 percent increase in the high school college-going rate, raising it from 62 percent in 2002 to 74 percent by 2020. Past trends reveal that this rate was 49 percent in 1992, an increase of over 26 percent in a 10-year period.[12] This step also seeks to increase the postsecondary system's 2002 six-year bachelor's degree graduation rate of 43.6 percent to 56 percent by 2020. This rate increased from 38.5 percent in 1993 to the current 2002 rate.[13] Both increases correspond to an

TABLE 1
Five Steps of CPE Plan to Attain 2020 Goal of Additional Bachelor's Degree Holders

Intervention	Strategies to 2020	Additional Bachelor's Degrees Produced
STEP 1: Increase postsecondary participation and quality	• Increase the high school college-going rate from 62% to 74% • Increase the adult college participation rate from 3.6% to 4.5% • Raise the postsecondary system's graduation rate from 43.6% to 56%	66,000
STEP 2: Improve GED to college transitions	• Increase college-going of GED graduates from 19% to 36% • Increase the annual number of GED graduates from 9,000 to 15,000	4,000
STEP 3: Funnel more first-time students through KCTCS	• Improve general education credit transfer • Keep KCTCS tuition low • Increase the number of students transferring from KCTCS to four-year universities from 3,100 to 11,334	26,000
STEP 4: Raise high school graduation rates	• Enhance guidance counseling/support services • Improve teacher preparation programs • Increase the high school graduation rate of 9th graders form 72% to 81%	36,000
STEP 5: Increase migration and economic development	• Create new jobs to attract college-educated, out-of-state residents • Keep college graduates working in Kentucky • Double the number of jobs requiring at least a bachelor's degree	79,000
	Additional bachelor's degree holders	211,000
	Production at current level	+580,000
	2020 Goal	791,000

Source: Kentucky Council on Postsecondary Education "Double the Numbers" brochure available online at <http://cpe.ky.gov/planning/2020projections/>

approximate average growth rate of 1.4 percent annually. Attaining the number of degree holders identified by this step is highly probable given past trends.[14]

Step 2. A portion of the 4,000 additional degree holders added by Step 2 will be obtained by increasing the annual number of GED graduates from 9,000 to 15,000 by 2020. However, this number declined over a four-year period from 9,452 in 2002-03 to 9,007 in 2005-06.[15] The remaining degree holders will be achieved by increasing the college-going rate of GED graduates from 19 percent in 2002 to 36 percent in 2020. Kentucky has progressed on this indicator, as GED graduates enrolling in college have increased from 12 percent in 1998 to 22 percent in 2005.[16] This projection is based on past growth in this estimate and, by definition, falls in line with past trends. Given the mixed probability of attaining these steps, we consider this to have a "medium" probability of success.

Step 3. To attain the number of degree holders required in Step 3, the state will need to improve KCTCS transfers to four-year institutions from approximately 3,100 to 11,334. Since the 1997-98 school year, this estimate has remained relatively unchanged, fluctuating between a low of 3,613 in 2001-02 to a high of 4,191 in 2004-05.[17] Consequently, the 11,334 is well beyond current numbers. In addition, improving the general education credit transfer and keeping KCTCS tuition low are two more strategies for producing the number of degree holders projected in Step 3. Yet, one of the key findings of the State Auditor's Report is that "rising tuition is also impacting enrollment in the two-year system." Historically lower numbers of KCTCS transfers and rising tuition costs suggest that this step has a low likelihood of achievement.

Step 4. A portion of the degree holders in Step 4 results from an increase in the high school graduation rates of 9th graders from 72 percent to 81 percent in 2020. However, this rate has remained relatively unchanged since 1990.[18] The step also calls for enhanced guidance counseling and support services and improvement in teacher preparation programs. Given the unknown impact of the latter two strategies combined with the low likelihood of the former, this step is categorized as having a medium likelihood of realization.

Step 5. This step, by virtue of the number of degree holders, is the most ambitious of the five. In this step of the intervention plan, Kentucky will create new jobs to attract college-educated, out-of-state residents; keep college graduates working in Kentucky; and double the number of jobs requiring at least a bachelor's degree. However, past trends and future projections suggest a low likelihood for achievement of this goal. For example, a 2004 study found that Kentucky experienced a net gain of approximately 4,800 degree holders over the period 1995 to 2000.[19] Furthermore, according to data from the Council, approximately 61 percent of graduates from Kentucky postsecondary institutions are working in Kentucky five years after graduation, while 86 percent continue living here.[20] Finally, according to a report from the Kentucky Education Cabinet, jobs requiring at least a bachelor's degree will grow approximately 33 percent, adding approximately 44,100 jobs to the current 2004 employment of 264,182 and will account for only 14 percent of the job growth in the state through 2014.[21]

TABLE 2
Predicted Economic Outcomes Associated with the Number of Degree Holders Produced by Each Policy Scenario

Plan	Additional Degree Holders	Additional 2020 PCI
Current Trends: Increase four-year degree holders under current production levels	N/A	($3,492)*
Step 1: Increase postsecondary participation and quality	66,000	$1,040
Step 2: Improve GED to college transitions	4,000	$65
Step 3: Funnel more first-time students through KCTCS	26,000	$424
Step 4: Raise high school graduation rates	36,000	$599
Double-the-Numbers and Step 5:* Increase migration and economic development	79,000	$1,365

*These estimates are negative and represent the difference between the "double-the-numbers" and the "current trends" scenarios. The five rows below, when summed, are equal to this dollar amount (numbers may not sum to total due to rounding).

TABLE 3
Additional Amount of PCI and Likelihood Associated with the Achievement of Five Steps to Double the Number of Bachelor's Degree Holders in Kentucky by 2020

Likelihood of Success	Amount of Additional 2020 PCI		
	Low (< $100)	Med ($100-$999)	High (>$1,000)
Low		**Step 3**: Funnel more first-time students through KCTCS	**Step 5:** Increase migration and economic development
Med	**Step 2**: Improve GED to college transitions	**Step 4**: Raise high school graduation rates	
High			**Step 1:** Increase postsecondary participation and quality

Achieving the Goal

While we discuss the many challenges to achieving this goal, it is not the purpose of this exercise to suggest that the "double-the-numbers" scenario will not come to fruition. Rather, our objective is to highlight some of the challenges in implementing these strategies and identify areas requiring additional attention. By considering the likelihood of success and the amount of per capita income added by each "step," we can isolate those steps that are *low* to *medium* in regard to the likelihood of their success and *medium* to *high* on their contribution to per capita income. As shown in Table 3, Steps 3, 4, and 5 fall into these categories, accounting for two-thirds (141,000) of the increase needed (211,000) to double the number of degree holders. This implies that to fully achieve the "double-the-numbers" scenario, we will need to focus considerable attention on increasing the transition rate from KCTCS to four-year universities, decreasing the high school dropout rate, and developing an economy that can attract and retain high-knowledge workers. These efforts will help increase the 2020 PCI from the $33,880 achieved should the state succeed in realizing only steps 1 and 2 of the intervention plan.[22]

By investing in its workforce and achieving the national rate of working-age adults with a bachelor's degree or higher by 2020, Kentucky stands to gain billions of dollars in personal income and revenue over what it will achieve at current bachelor's degree-holder production levels. Possible challenges emerge in several areas as indicated by past trends in the area of education in Kentucky and the potential of mitigating factors for the future. Attracting and keeping new graduates through jobs and community-building will require focused, collaborative efforts on the parts of many in Kentucky, not just the postsecondary education system. Bringing in new jobs and building communities that are attractive to those needed to fill them will require efforts on the part of economic development, the business community, and local and municipal governments, as well as citizens themselves. Sustaining the momentum the state already has in the area of enrollments and graduations will require that tuition rates be monitored as well as other barriers that may hinder the accessibility and affordability of postsecondary education for Kentuckians.

Notes

[1] *Kentucky Postsecondary Education Improvement Act of 1997*, online at <http://www.lrc.state.ky.us/recarch/97ss/HB1/bill.doc>.

[2] The United States is fourteenth among developed nations in the percent of its adult population with a bachelor's degree or higher.

[3] Per capita income was measured in constant dollars in the models used. All dollars are measured in real terms based on 2003 price levels as measured by the consumer price index. See Technical Appendix for more details on the methodology used to estimate the models.

[4] This is not a strict cost-benefit analysis as costs are not accounted for here.

[5] These are selected benefits of increasing the level of educational attainment in Kentucky's workforce. Studies have shown many other associated outcomes including better health outcomes, higher civic and political engagement of the population, lower incidence of crime, and less reliance on public programs, among others.

[6] Kentucky Council on Postsecondary Education (CPE), *Double the Numbers: Putting Kentucky's Public Agenda Into Action* (CPE: Frankfort, 2006).

[7] CPE, *Double the Numbers*.

[8] See Technical Appendix for a complete account of the aggregate personal income and general fund revenue associated with each step.

[9] Numbers may not sum to total due to rounding. See Technical Appendix for a full account of the economic benefits attributable to each step.

[10] Office of the Kentucky State Auditor, Division of Performance Audit, *Recent Kentucky Tuition Increases May Prevent the Achievement of the Commonwealth's 2020 Postsecondary Education Goals*, Briefing Report, 12 Feb. 2007.

[11] CPE, *Securing Kentucky's Future: A Plan for Improving College Readiness and Success*, Feb. 2007 <http://cpe.ky.gov/NR/rdonlyres/CBAA5350-E515-42E2-8D8B-B5E61286135C/0/DevEdTaskForce_FullReport_FINALFORWEB.pdf>.

[12] These data were gathered from the National Information Center for Higher Education Policymaking and Analysis <www.higheredinfo.org>.

[13] These data were drawn from the CPE Comprehensive Database.

[14] The data CPE used to develop targets measuring adult college participation were developed through a custom analysis by the National Center for Higher Education Management Systems. No comparable historical data exist.

[15] CPE, *Five Questions, One Mission: Better Lives for Kentucky's People*, "2005-06 Kentucky Postsecondary Education Accountability Report," <cpe.ky.gov/planning/statusreports/>.

[16] CPE, *Five Questions, One Mission: Better Lives for Kentucky's People*, "2005-06 Kentucky Postsecondary Education Accountability Report," <cpe.ky.gov/planning/statusreports/> and *The Kentucky Adult Education Report Card*, 2005 <http://cpe.ky.gov/info/adult/index.htm>.

[17] Data were drawn from the CPE Comprehensive Data Base.

[18] The 72 percent estimate is from "The Average Freshman Graduation Rate for Public High Schools from the Common Core of Data, School Years 2001-02 and 2002-03," from the National Center for Education Statistics. This estimate was adopted by the Kentucky Department of Education to fulfill requirements of the No Child Left Behind Act. No past data exists that corresponds with the 72 percent estimate. However, historical data on graduation rates are available through the Information Center of the National Center for Higher Education Management Systems, 26 Feb. 2007 <http://www.higheredinfo.org/dbrowser/index.php?measure=23>. These data show that the high school graduation rate of 9th graders in public institutions in Kentucky remained relatively unchanged and declined slightly from 69 percent in 1990 to 65 percent in 2004.

[19] Michael Price, Martye Scobee, and Thomas Sawyer, *Kentucky Migration: Consequences for State Population & Labor Force* (Louisville, Kentucky: University of Louisville, Kentucky State Data Center) 2004.

[20] CPE, Statewide Key Indicators, "College Graduates Remaining in Kentucky to Live and Work," 26 Feb. 2007 <http://cpe.ky.gov/planning/keyindicators/Statewide/>; CPE, *Brain Gain: Retaining Kentucky Graduates*, Special Report 07.1.

[21] Education Cabinet, Research and Statistics Branch, Department for Workforce Investment, Office of Employment and Training, *Kentucky Occupational Outlook to 2014* (Frankfort: Author, 2006) 26 Feb. 2007 <http://www.workforcekentucky.ky.gov/admin/uploadedPublications/395_KY_OUTLOOK_2014.pdf>.

[22] See Technical Appendix for a full account of the economic benefits attributable to each step.

Technical Appendix

Technical Details on Selected Economic Benefits Associated with Doubling the Number of Bachelor's Degree Holders in Kentucky

Estimates of the Economic Benefits

Table A.1 and Table A.2 present the economic outcomes and the additional estimated amounts associated with the number of degree holders produced in each policy scenario. These estimates reveal the potential amount of income and revenue Kentucky stands to gain by investing in the education of its workforce. These are selected benefits however and do not provide a complete picture of the full

TABLE A.1
Predicted Economic Outcomes Associated with the Number of Degree Holders Produced by Each Policy Scenario

1	2	3	4	5	6	7	8
Plan	**2020 Total Degree Holders**	**2020 Four-Year Degree Rate**	**2020 PCI**	**2020 API**	**Cumulative API 2000 to 2020**	**2020 GF Revenue**	**Cumulative GF Revenue 2000 to 2020**
Current Trends: Increase four-year degree holders under current production levels	580,000	23.6%	$32,776	$161.3 B	$2.76 T	$9.8 B	$152.7 B
Step 1: Increase postsecondary participation and quality	646,000	26.2%	$33,816	$166.4 B	$2.81 T	$10.2 B	$155.5 B
(1+) Step 2: Improve GED to college transitions	650,000	26.4%	$33,880	$166.8 B	$2.81 T	$10.2 B	$155.7 B
(1+2+) Step 3: Funnel more first-time students through KCTCS	676,000	27.5%	$34,304	$168.9 B	$2.83 T	$10.4 B	$156.8 B
(1+2+3+) Step 4: Raise high school graduation rates	712,000	28.9%	$34,903	$171.8 B	$2.85 T	$10.6 B	$158.3 B
(1+2+3+4+) Step 5 or Double-the-Numbers*: Increase migration and economic development	791,000	32.1%	$36,268	$178.5 B	$2.90 T	$11.0 B	$161.7 B

*This step brings the total number of degree holders to the same level as the full goal. That is, this number represents a doubling of the number of four-year degree holders in Kentucky's adult population. This step brings the total *additional* degree holders to 211,000.

TABLE A.2
Economic Gains Associated with Number of Degree Holders Produced by Each Policy Scenario

1	2	3	4	5	6	7
Plan	**Additional Degree Holders**	**Additional 2020 PCI**	**Additional 2020 API**	**Additional Cumulative API**	**Additional 2020 GF Revenue**	**Additional Cumulative GF Revenue 2000 to 2020**
Current Trends: Increase four-year degree holders under current production levels	N/A	($3,492)*	($17.2 B)*	($139.5 B)*	($1.1 B)*	($9.0 B)*
Step 1: Increase postsecondary participation and quality	66,000	$1,040	$5.1 B	$43.4 B	$335 M	$2.8 B
Step 2: Improve GED to college transitions	4,000	$65	$0.3 B	$2.6 B	$21 M	$0.2 B
Step 3: Funnel more first-time students through KCTCS	26,000	$424	$2.1 B	$17.1 B	$137 M	$1.1 B
Step 4: Raise high school graduation rates	36,000	$599	$2.9 B	$23.8 B	$193 M	$1.5 B
Double-the-Numbers and Step 5:* Increase migration and economic development	79,000	$1,365	$6.7 B	$52.5 B	$440 M	$3.4 B

*These estimates are negative and represent the difference between the "double-the numbers" and the "current trends" policy scenarios. The five rows below sum to equal these dollar amounts.
**This step brings the total number of degree holders to the same level as the full goal. That is, this number represents a doubling of the number of four-year degree holders in Kentucky's adult population. This step brings the total additional degree holders to 211,000.

benefits associated with doubling the number of working-age adults with a Bachelor's degree or higher level of education.

Table A.1 shows that as the number of degree holders increases with each step of the intervention plan, the 2020 PCI increases accordingly, as does the 2020 aggregate personal income (API), the cumulative API over the time period 2000 to 2020, and the associated general fund (GF) revenue amounts. Table A.2 shows the additional amounts associated with each discrete change in the number of degree holders produced by that step.

Kentucky stands to gain up to $139.5 B more in additional API and $9.0 B more in additional GF revenue if it achieves reaching the national average in the percent of its working-age population with a bachelor's degree or higher. Steps 1 and 5 account for over half (69 percent) of the additional degree holders needed to double the number of degree holders in the state by 2020. The associated additional API and GF revenue amounts over the time period 2000 to 2020 are $95.9 B and $6.2 B, respectively. The remaining steps are important, however, in that if they are not fulfilled, Kentucky will fall short of its goal by 31 percent and miss out on approximately $43.6 B more in API and $2.8 B more in GF revenue.

Methodology of the Underlying Model

This technical appendix describes the data and methodology used to explain variations in past and future estimates of state-level per capita income relative to education. Table A.3 shows information regarding the variables used in the analysis.

The Data

TABLE A.3
Names, Description, and Source of State-Level Variables, 1984-2003

			1984		2003	
Name	**Description**	**Source**	**Mean**	**Kentucky**	**Mean**	**Kentucky**
PCI	Real per capita personal income in constant 2003 dollars	Bureau of Economic Analysis	$23,532	$19,714	$30,512	$26,252
EDU	Percent of persons 25 to 64 years old with at least a bachelor's degree	March Current Population Survey	19%	15%	29%	24%
PCEMP	Per capita private employment	Bureau of Economic Analysis	41%	34%	50%	45%
URBAN	Percent of the population living in urban areas	Decennial Census, 1980, 1990, and 2000	67%	51%	72%	56%

Note: The estimates for educational attainment rates presented here were taken from the Current Population Survey and do not match exactly the estimates from the 2000 Decennial Census, nor are they equal to those estimated using the new American Community Survey.

The Model

A log-linear model explained the relationship between PCI and each of the independent variables:

$$\ln(PCI_{it}) = a_{it} + B_{1t}EDU_{it} + B_{2t}PCEMP_{it} + B_{3t}URBAN_{it} + u_{it}$$

for all i = 1 to 50 for each of the 50 states, t = 1 to 20 for each of the 20 years from 1984 to 2003, and error term u~ N(0,1).

Each variable is hypothesized to have a positive relationship with PCI:

H_0: $B_1 > 0$
$B_2 > 0$
$B_3 > 0$
H_A: $B_1 = B_2 = B_3 = 0$

The Results

All estimated coefficients for all 20 models were positive and statistically significant at approximately the 1 percent level. The adjusted R_2 values for each of the models ranged from a low of 0.59 in 1994 to a high of 0.77 in 1988. Table A.4 shows the elasticities of each variable given by each model year.

The Policy Scenarios

The policy scenarios come from projections made by the Kentucky Council on Postsecondary Education (CPE or the Council). Their report "Double the Numbers: 2020 Targets and Projections Methodology" explains how they arrived at their estimated goals. The numbers provided in the intervention plan were obtained from the Council's "Double the Numbers" brochure. Both reports are available online at <http://cpe.ky.gov/planning/2020projections>.

The Projections

The compound annual growth rate (CAGR) of the elasticities listed in Table A.4 were used to project out to 2020 the estimated relationship between the independent variables of educational attainment, per capita private employment, and the percent of people living in an urban area, and the dependent variable, PCI, which are listed in Table A.5. The CAGRs for both per capita private employment and the urban population for Kentucky were used to project the growth in each of these variables to 2020. Using these changes and the ones provided in each of the policy scenarios, per capita income was predicted annually for the years 2000 to 2020. The predicted populations were used to obtain aggregate personal income for the state. Finally, a revenue elasticity of one was assumed in predicting the subsequent changes in revenue growth.

Notes

[1] *In 1984, 1989, and 1992 the levels of statistical significance for the estimated coefficients on EDU were slightly greater than 1 percent, but still well below the 5 percent statistical significance level.*

TABLE A.4 Elasticities:* *Percentage* Change in PCI Given a 1 *Unit* Change in the Independent Variable, 1984-2003			
Model Year	**EDU**	**PCEMP**	**URBAN**
1984	0.92	1.31	0.30
1985	1.29	1.24	0.26
1986	1.08	1.32	0.32
1987	1.00	1.61	0.29
1988	0.79	1.83	0.33
1989	0.89	1.75	0.32
1990	1.21	1.49	0.31
1991	0.94	1.41	0.34
1992	0.89	1.59	0.31
1993	1.15	1.25	0.30
1994	1.04	1.05	0.37
1995	1.14	0.90	0.39
1996	1.61	0.75	0.29
1997	1.27	1.02	0.32
1998	1.24	1.04	0.32
1999	1.22	1.20	0.34
2000	1.40	0.96	0.41
2001	1.17	1.04	0.35
2002	1.38	0.86	0.29
2003	1.14	0.93	0.29

**Note: These aren't true elasticities. They measure the percentage change in PCI given a one- unit change in the independent variable rather than a percent change.*

TABLE A.5 Projected Elasticities: *Percentage* Change in PCI Given a 1 *Unit* Change in the Independent Variable, 2004-2020			
Model Year	**EDU**	**PCEMP**	**URBAN**
2004	1.15	0.91	0.29
2005	1.17	0.90	0.29
2006	1.18	0.88	0.29
2007	1.19	0.87	0.28
2008	1.21	0.85	0.28
2009	1.22	0.83	0.28
2010	1.23	0.82	0.28
2011	1.25	0.81	0.28
2012	1.26	0.79	0.28
2013	1.28	0.78	0.28
2014	1.29	0.76	0.27
2015	1.31	0.75	0.27
2016	1.32	0.74	0.27
2017	1.34	0.72	0.27
2018	1.35	0.71	0.27
2019	1.37	0.70	0.27
2020	1.38	0.68	0.27

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FORESIGHT Does having an uninsured population come at a cost to all of us, and is it greater or less than simply giving the uninsured the health care they need? Are illegal immigrants flooding into Kentucky communities at an alarming rate, taking jobs and opportunity from citizens, or has a false alarm been sounded? Can your nation manage the costs and consequences of the "demographic tsunami" of retiring baby boomers, particularly given mounting federal debt? Provocative questions and timely answers are the focus of *Foresight*. The Center's flagship publication, this periodical features original research and analysis by staff and from some of the nation's leading research entities.

Visioning Kentucky's Future: Measures and Milestones How do we stack up relative to our own past performance, to other states, and to the nation as a whole? Have we made progress, simply stood still, or lost ground on goals that matter to the people of Kentucky? Find the answers in this biennial report on trends that are certain to affect the Commonwealth's future. From access to health care and housing to educational achievement and economic performance, *Visioning* is a compendium of facts and figures about our state, and an essential reference tool for every future-minded person who cares about Kentucky.

Policy Notes If we don't change our lifestyles, how many Kentuckians will be overweight or obese in the years to come and at what cost to the public? If education really pays, in what ways and just how much? Will public employee pension costs take a bigger bite out of the state budget and at what cost to other programs? *Policy Notes* are short pieces—two pages, front and back—that distill comprehensive research and analysis of issues that will affect our future.

Horizon Headlines that hint at the future, *Horizon* summarizes some of the most telling and discusses their implications for the future of Kentucky. Each quarterly issue explores some of the most timely issues we face.

Data Briefings from the Kentucky Health Insurance Research Project Who are the uninsured and why? Are they spending their disposable cash unwisely or is the cost of insurance out of reach for most? These one-page summaries distill findings from surveys conducted by the UK Survey Research Center for the Kentucky Health Insurance Research Project.

Conference Proceedings Gavel-to-gavel presentations and discussions from selected Center conferences. The most recent, *Measures and Milestones 2006: Trends Affecting Kentucky's Future*, takes readers to the 13th annual conference held in Lexington in 2006 where researchers discussed timely topics certain to influence the future of the Commonwealth. They include the challenges and changes posed by an aging population, the future scope and likely role of an immigrant population, the limitations and promise of our current health care system, unrealized educational promise, and much more.

All publications are available free of charge at the Center's Web site at <http://www.kltprc.net> or in print while supplies last.

Save the Date!

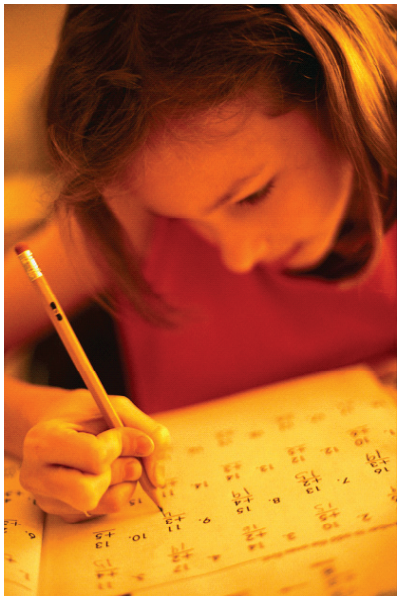
November 13, 2007

Making Money Matter:
Maximizing Student Achievement with Our Investments in Education

14th Annual Conference of the

KENTUCKY LONG-TERM POLICY RESEARCH CENTER

Lexington Convention Center



Where should we target our limited resources to achieve the best possible academic and social outcomes for all children in the Commonwealth? Research is yielding answers to what levers matter most in educational settings at every level. Learn about these emerging findings in thoughtful discussion and debate at the Center's fall conference. If the future matters to you, be there.

FORESIGHT

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